The significance of the sporocysts on the gill interribs is not clear. Their appearance in this region in lightly infected oysters demonstrates that their presence is not necessarily indicative of an advanced state of infection, as has been noted for other bucephalid infections by several authors. The reasons for regarding these sporocysts on the gills as the terminal portions or growing points are given elsewhere (Howell, 1966).

More sampling will be necessary to determine whether lightly infected oysters are capable of spawning. Kniskern (1952) has noted the simultaneous shedding of cercariae and glochidia in *Lampsilis siliquoidea,* infected with sporocysts of *Rhipidocotyle septpapillata.* The presence of mature sperm and eggs in the follicles of lightly infected oysters suggests that spawning may possibly take place before the infection becomes heavy.

The 18 lightly infected oysters examined contained well-developed eggs and sperm within some of the follicles. Although the sample was small it suggests that a well-developed gonad is necessary to support the infection. It is notable that in lightly infected bivalves examined by Woodhead (1930), Roughley (1933), and Kniskern (1952), the gonad was well developed. Further work will be necessary to show whether the degeneration of the gonad is mechanical, or whether it is chemically induced by the sporocysts so that an assimilable food material is produced for the sporocysts and developing cercariae.

Palombi (1934) recovered "*Bucephalopsis haimeana*" from *Tapes decussatus* and *T. aureus* only during March, May, October, and November. Andreu (1949) recovered the same species from *T. aureus* only during May over the period March till June. However, it seems improbable that the infection becomes apparent, destroys the gonad and disappears within the short intervals recorded by these authors. In *O. lutaria,* the parasite is present for at least eight consecutive months of the year and, during this time, exhibits seasonality in the intensity of the infection. This latter phenomenon has not been reported by investigators for other species due, in the main, to the short-term investigations that have been carried out.

The minimum size of an infected oyster is notable. Although it was impossible to state with certainty the age of specimens of this size, it would appear that oysters are approximately two years old before they are susceptible to infection.

There is little conformity of opinion as to the long-term effects of bucephalid infections on their hosts. Various opinions have been expressed by McCrady (1874), Huet (1889), Tennent (1906), Woodhead (1930), and Menzel and Hopkins (1955), based on the different bivalves they have examined. As far as *O. lutaria* is concerned, the serious loss in condition which the oysters undergo coupled with the apparent seasonality of the parasite as outlined above, and the results of mortality experiments which agree with those given by Millar (1963), suggests that infection ultimately results in death of oysters. Under natural conditions on oyster beds, death of many infected oysters appears to be due to secondary factors which can operate as a result of the fall-off in efficiency of the adductor muscle. This phenomenon, which has been observed to occur in laboratory held specimens, allows the undesirable entry into the mantle chamber of small fish, crustaceans, excess sand and other debris.

Experimental infections of *O. lutaria* by miracidia would be necessary to determine the duration of the infection. However, it would appear that from the seasonality exhibited that an oyster lives, at most, for approximately 12 months from the time it can be recognised as lightly infected. Woodhead (1930) and Menzel and Hopkins (1955) have contended that the infected bivalves they have examined harbour infections for considerably longer periods of time than that suggested above for the present species. However, they have not supplied any statistical data to support their views.